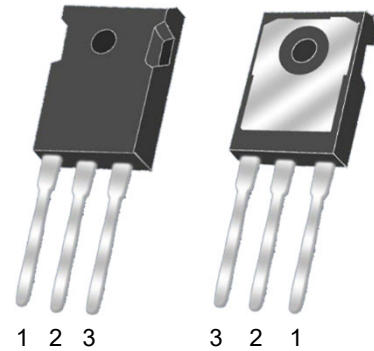
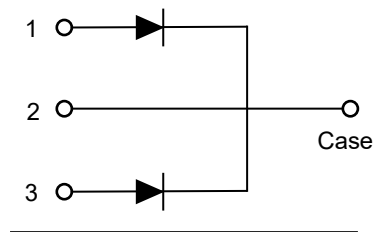


## Feature

- Low conduction loss due to low  $V_F$
- Extremely low switching loss by tiny  $Q_C$
- Negligible reverse recovery
- Positive Temperature Coefficient
- Pb-free / RoHS compliant
- Highly rugged due to better surge current
- High-reliability



**TO-247-3L**



**Circuit Diagram**

## Applications

- Solar inverters
- Uninterruptable power supplies
- Motor drives
- Power Factor Correction

## Absolute maximum rating@25°C

Parameter		Symbol	Value	Units
Repetitive Peak Reverse Voltage		$V_{RRM}$	650	V
Surge Peak Reverse Voltage		$V_{RSM}$	650	V
Continuous Forward Current	$T_c=25^\circ\text{C}$	$I_{F(AVG)}$	32*/64**	A
	$T_c=150^\circ\text{C}$		10*/20**	
Non-repetitive Forward Surge Current	$T_c=25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$	$I_{FSM}$	105	A
Power Dissipation	$T_c=25^\circ\text{C}$	$P_{tot}$	197*	W
	$T_c=110^\circ\text{C}$		85*	
Operating junction Range		$T_J$	-55~+175	°C
Storage Temperature Range		$T_{STG}$	-55~+175	°C

\* Per leg \*\* Per Device

## Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
DC Blocking Voltage	$V_{DC}$		650	-	-	V
Forward Voltage	$V_F$	$I_F = 10A, T_j = 25^\circ C$	-	1.29	-	V
		$I_F = 10A, T_j = 175^\circ C$	-	1.40	-	
Reverse Current	$I_R$	$V_R = 650V, T_j = 25^\circ C$	-	1	-	$\mu A$
		$V_R = 650V, T_j = 175^\circ C$	-	3	-	
Total Capacitive Charge	$Q_C$	$V_R = 400V, T_j = 25^\circ C,$ $Q_C = \int_0^{V_R} C(V) dV$	-	38*	-	nC
Total Capacitance	C	$V_R = 1V, f = 1MHz$	-	551	-	pF
		$V_R = 300V, f = 1MHz$	-	63	-	
		$V_R = 400V, f = 1MHz$	-	57	-	
Capacitance stored energy	$E_C$	$V_R = 400V$	-	5.7	-	$\mu J$

## Typical Characteristics

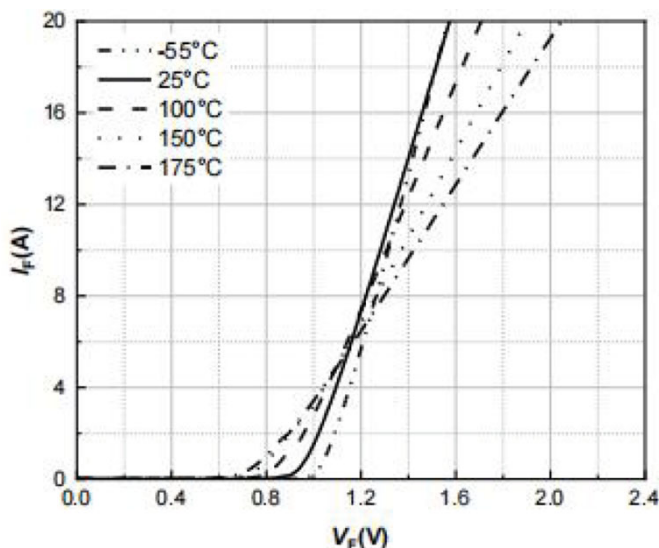


Fig.1 Forward Characteristics

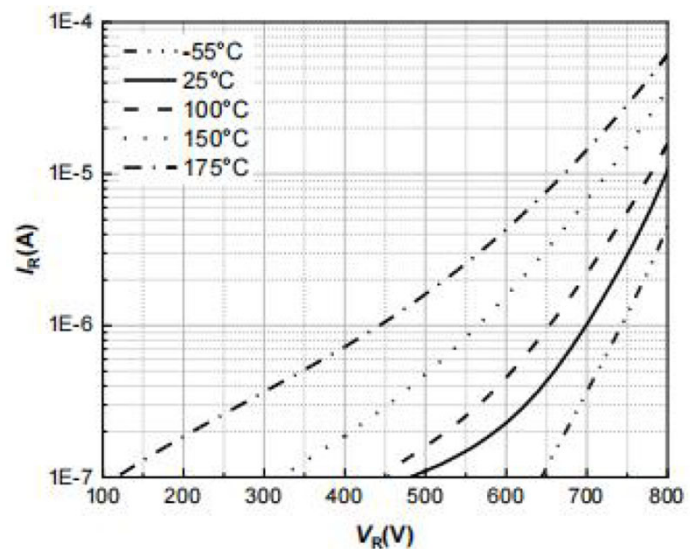


Fig.2 Reverse Characteristics

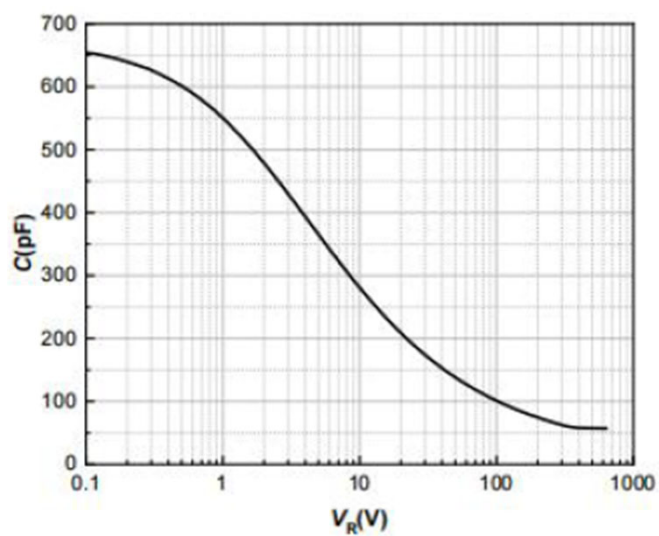


Fig.3 Capacitance vs. Reverse Voltage

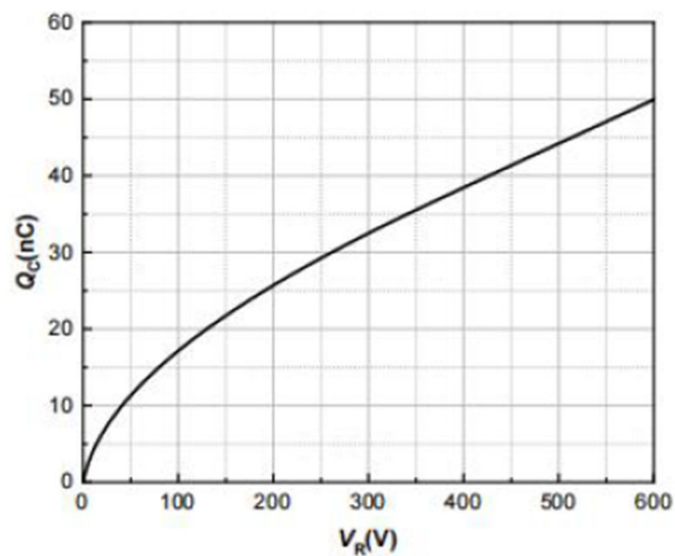
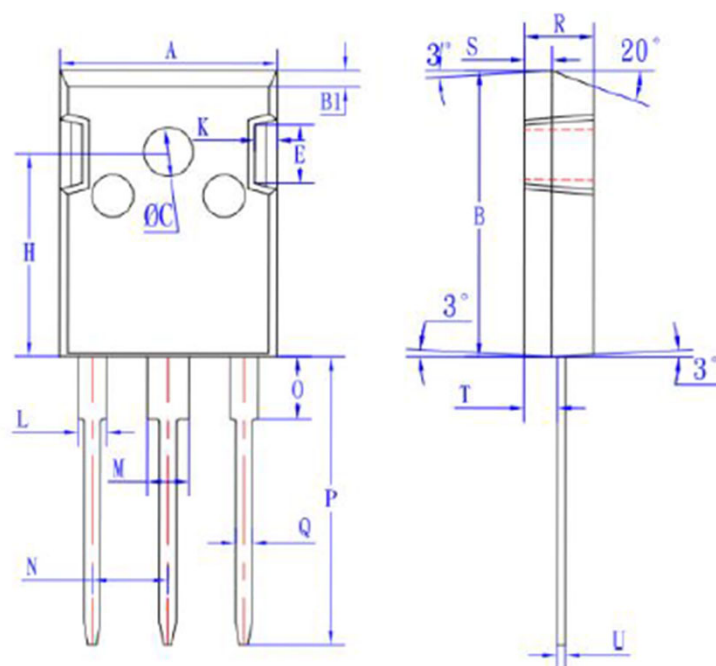



Fig.4 Reverse Charge vs. Reverse Voltage

## Product dimension (TO-247-3L)



Dim	Millimeters	
	Min	Max
A	15.51	15.71
B	20.42	20.52
B1	0.89	1.12
C	3.62	4.59
E	4.15	4.25
H	14.22	14.56
K	1.50	1.68
L	1.97	2.02
M	2.95	3.10
N	5.41	5.46
O	4.32	4.48
P	20.51	20.76
Q	1.17	1.23
R	4.95	5.05
S	1.98	2.04
T	2.35	2.41
U	0.60	0.66


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